

Topic: Exponents

Question: Find the value of the expression.

$$3^4$$

Answer choices:

- A 12
- B 81
- C 27
- D 243



Solution: B

The expression 3^4 means that the base 3 needs to be multiplied by itself 4 times.

$$(3)(3)(3)(3)$$

$$(9)(3)(3)$$

$$(27)(3)$$

$$81$$



Topic: Exponents**Question:** Simplify by using exponents.

$$2 \cdot 2 \cdot 2 \cdot 7 \cdot 7 \cdot 7 \cdot 7 \cdot 7$$

Answer choices:

- A $2^3 \cdot 7^5$
- B $14^3 \cdot 7^5$
- C $4^2 \cdot 7^5$
- D $14^4 \cdot 7$



Solution: A

In the given expression,

$$2 \cdot 2 \cdot 2 \cdot 7 \cdot 7 \cdot 7 \cdot 7 \cdot 7$$

we see that 2 appears as a factor 3 times, so we can write that part in exponential form as 2^3 . Also, 7 appears as a factor 5 times, which we can write as 7^5 . Combining these results, we get

$$2^3 \cdot 7^5$$



Topic: Exponents**Question:** Find the difference.

$$8^2 - 3^3$$

Answer choices:

- A 5
- B 37
- C 4
- D 11



Solution: B

In order to find the difference, we need to simplify each term separately.

$$8^2 - 3^3$$

$$64 - 27$$

$$37$$

